(e) if a threshold number of feature points are identified in the second frame, adding the second frame to the segment; and

(f) repeating (c) through (e) for subsequent frames until the number of feature points in a frame falls below the threshold number.

REMARKS

Patentability over Moriya et al.

Claims 1-37 have been rejected under 35 U.S.C. 102(e) as being anticipated by Moriya et al., U.S. Pat. No. 6,046,745. The rejections are respectfully traversed.

Claims 1-8

Claim 1 is directed to a method of generating a three-dimensional scene from a sequence of two-dimensional images. Specifically claim 1 recites,

> A method of recovering a three-dimensional scene from two-dimensional images, the method comprising:
> providing a sequence of images;
> dividing the sequence of images into segments;
> performing three-dimensional reconstruction for each segment individually; and combining the three-dimensional reconstructed segments together to recover a three-dimensional scene for the sequence of images.

Claim 1's method includes the element, "dividing the sequence of images into segments." For example, in one embodiment described in the specification, a long sequence of images is sub-divided into segments containing a subset of the entire sequence of images in order to reduce the complexity of processing the entire sequence.

Moriya et al. fails to teach or suggest all elements of claim 1. Specifically, Moriya et al. fails to teach or suggest "dividing the sequence of images into segments" as recited in claim 1. In the action, the office suggests that Moriya et al. teaches, "dividing the sequence of images into segments" and directs the applicants to element 4038 in Fig. 40 in Moriya et al. The applicants respectfully disagree.

Element 4038 of Fig. 40 in Moriya et al. refers to a "basic figure constituting three-dimensional model concerning sub-figures such as points, lines, planes, type of a cube, a classification of a linear line and a curved line or the like." See Moriya et al., Col. 29, Lines 28-31.

Thus, Moriya et al. does not teach "dividing the sequence of images into segments." Instead, Moriya et al. refers to providing "a configuration of component elements" of a single image or frame. See Moriya et al. Col. 25, lines 27-38. Dividing a single image into component elements for generating a three-dimensional model, as taught by Moriya et al., is not the same dividing a long sequence of multiple images into shorter segments to simplify the processing necessary to reconstruct a three-dimensional scene from a sequence of two-dimensional images. For example, each two-dimensional image in a sequence of images, as claimed by applicants, may be related to a different camera pose such that a collection of such images could be combined to generate a complete three-dimensional image.

Because Moriya et al. fails to teach or suggest dividing a sequence of images into smaller segments, claim 1 and its dependent claims 2-8 should clearly be allowable over the cited reference.

Claims 9-22

Claim 9 is also directed to a method of recovering a three-dimensional scene from two-dimensional images. Claim 9 also contains the following element:

> "dividing the sequence of frames into segments, wherein a segment includes a plurality of frames;"

Thus, at least for the reasons stated for claim 1, Moriya et al. does not teach methods of processing a sequence of two-dimensional images by dividing the sequence into segments prior to reconstructing a three-dimensional scene from the segments. Claim 9 and its dependent claims 10-22 should be allowed. Such action is respectfully requested.

Claims 23-30

With the above requested amendment, claim 23 recites the following element: "segmenting the sequence of two-dimensional frames." Furthermore, at least for the reasons stated for claim 1, Moriya et al. does not teach or suggest dividing a sequence of two-dimensional images into segments prior to reconstructing a three-dimensional scene from the segments. Claim 23 and its dependent claims 24-30 should be allowed. Such action is respectfully requested.

Claims 31-37

Claims 31, 36 and 37 all recite the element of dividing a sequence of images or frames into segments. Thus, at least for the reasons stated with regard to claim 1, claims 31, 36 and 37 should be allowable. Furthermore, claims 32-35 depend on claim 31, thus claims 32-35 should also be allowable.

CONCLUSION

In light of the amendments and remarks presented above the claims in their present form should be allowable. Such action is respectfully requested.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By _____
Robert F. Scotti
Registration No. 39,830

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 226-7391
Facsimile: (503) 228-9446
(127696.1)

Marked-up Version of Amended Claims
Pursuant to 37 C.F.R. §§ 1.121(b)-(c)

23. (Amended) A method of recovering a three-dimensional scene from a sequence of two-dimensional frames [by segmenting the frames], comprising:

(a) segmenting the sequence of two dimensional frames;

[(a)] (b) identifying feature points in at least a first base frame in a first segment;

[(b)] (c) analyzing a second frame in the segment to identify the feature points in the second frame;

[(c)] (d) determining whether a threshold number of feature points from the base frame are identified in the second frame;

[(d)] (e) if a threshold number of feature points are identified in the second frame, adding the second frame to the segment; and

[(e)] (f) repeating [(b)] (c) through [(d)] (e) for subsequent frames until the number of feature points in a frame falls below the threshold number.